

## External Panel Review of C-Farm Risk Assessment

### Introduction

The CH2M Hill Hanford Group, Inc. (CH2M Hill) is completing the initial development of a risk assessment model to support retrieval of waste from Single Shell Tank C-106 (C-106) and closure of C Tank Farm.

The purpose of the External Panel (Panel) is to provide independent third party review of the assessment model. The result of the review will be summarized in a report and provided to CH2M Hill, the U.S. Department of Energy, Office Of River Protection, the Washington State Department of Ecology (Ecology), the U.S. Environmental Protection Agency, Region 10 (EPA) the local Tribes, and interested members of the public.

### Background

The U.S. Department of Energy (DOE) is currently proposing to accelerate cleanup of the Hanford Site by 20 years, or more. Key to accelerating cleanup is accelerating the retrieval of waste from the Single Shell Tanks (SST) and closing those tanks. Successfully accelerating the closure of the SST requires a risk assessment model that can reasonably be used to answer the fundamental question, “Are we being adequately protective of human health and the environment?”

The Hanford Site contains 177 underground tanks storing radioactive mixed waste. These tanks, located in 18 tank farms on two separate areas (200 East Area and 200 West Area) comprise approximately 63% of all such DOE tanks. These tanks store approximately 201 million L (53 million gal) of waste containing about 200 million curies of radioactivity. There are 149 of the older (some nearly 60 years old) SST (approximately 80% of all DOE SST), each consisting of a reinforced-concrete vault with a single carbon steel liner. Sixty-seven of these tanks are known or assumed to have leaked to the soil (approximately 98% of all DOE tanks that have leaked). The 28 newer tanks each have two carbon steel liners; none are known to have leaked.

Under the Hanford Federal Facility Compliance Agreement and Consent Order (Tri-Party Agreement) retrieval of all Hanford Site SST is to be completed by FY 2018 and closure by 2024. Closure of the Hanford tanks will occur under the Washington State *Hazardous Waste Management Act* and its implementing “Dangerous Waste Regulations” (WAC-173-303).

Closure of the Hanford tanks and the surrounding soil is greatly complicated by the number of failed tanks as well as an estimated 3.8 million L (1 million gal) of tank wastes that are now in the surrounding vadose zone and groundwater.

These facts make clear the need for a risk assessment model that can adequately address the risks associated with any proposed end state (completion of clean-up/remediation).

### Scope of Work

A risk assessment process and a preliminary risk model have been completed. A central element of the model development to date has been that the model application is iterative and will be updated as the waste from tanks is retrieved and additional field and waste characterization data become available. Further, the ability to generate quantitative estimates of risk for comparison to major environmental requirements and guidelines is complete. However, additional work is required before the model is ready for use by DOE and Ecology.

It is expected the Panel will provide a review of the current development status and future plans. The scope and order of the review will be:

- Programmatic model development and application process
- C –Farm Model conceptualization
- Sufficiency of the technical data base used to support the development
- Need for additional data and analysis
- Reliability and uncertainty of C-Farm model results
- Comparability of Exposure scenarios to other comparable applications

### Goal of Panel review

The goal of the Panel is to provide CH2M Hill with a draft report of its findings relative to the scope, described above, by February 28, 2004.

### Washington State Department of Ecology & U.S. EPA

Ecology and EPA have reviewed the scope of the proposed review and the Panel membership. Ecology and EPA shall be provided the materials provided to the Panel, at the same time they are provided to the Panel, to allow Ecology and EPA the opportunity to provide comments to the Panel.

### Local Tribes

Tribes local to the Hanford Site shall be provided with the materials provided to the Panel at the request of the Tribes.

## Stakeholders

Interested stakeholders shall, upon request, be provided with the materials provided to the Panel, at the same time they are provided to the Panel, to allow them opportunity to provide comments to the Panel.

## Schedule

Week of December 15, 2003: The Panel will receive information and data packages relevant to the scope items discussed above.

Week of January 12, 2004: The Panel will meet January 13, 14, and 15 from 8:00 a.m. to 4:30 p.m. The purpose of this meeting will be to:

- Conduct a technical discussion/exchange regarding information provided to the Panel in the week of December 15, 2003.
- Determine the need to obtain and review existing additional data or information to support the review.
- Obtain input from Ecology, EPA, the Tribes, and interested members of the public.

January 16, 2004 through February 22, 2004: The Panel completes its review of all information, including inputs received during the meeting of January 13 through January 15, 2004. The Panel drafts its report.

Week of February 23, 2004: The Panel meets in Richland to present CH2M Hill, ORP, Ecology, and EPA with a draft of its report.